

Greenways Primary Academy

Mathematics Policy



☆ Aim high & be a Star ☆

MAT Policy updated:	July 2021
Review Frequency:	Two years
Next review date:	July 2023

Subject Vision:

At Greenways Primary, we truly believe that the language of mathematics is international and that the basic knowledge components of mathematics are vital for the life opportunities of our children. Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It provides children with a foundation for understanding the world around us and to build enjoyment and curiosity.

With this in mind, our vision is to equip all of our children with the tools required to think mathematically and calculate fluently, enabling them to reason and solve problems in a range of different contexts. Through a concrete, pictorial and abstract approach, the children at Greenways Primary are afforded opportunities to experience a sense of awe and wonder as they solve a problem for the first time, discovering different solutions and making links between different areas of mathematics.

The aims of mathematics are:

- To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion
- To be competent in:
 - Numbers and number systems.
 - Calculations, both mental and written.
 - Measurement of shape and space.
 - Handle data and solve problems in all these areas
 - Using algebra to problem solve with number
- To develop the ability to solve problems through decision making and reasoning in a range of contexts.
- To develop a practical understanding of the ways in which information is gathered and presented.
- To explore features of shape and space, and develop measuring skills in a range of contexts.
- To understand the importance of mathematics in everyday life.
- To develop flexible problem solving behaviours.
- To ensure that all children will develop the necessary Numeracy skills

Teaching and Learning Style

The academy uses a variety of teaching and learning styles in mathematics lessons. We do this through a daily lesson that has a high proportion of whole-class and group-direct teaching. During these lessons, we encourage children to ask, as well as answer mathematical questions, and we promote the use of mathematical language through the use of intentional and consistent language that promotes challenge and aspirations.

Children have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. Children use ICT in mathematics lessons where it will enhance their learning. Wherever possible, we encourage the children to use and apply their learning in everyday situations and demonstrate 'Mastery' through planning extension tasks using reasoning and mastery tools such as White Rose Maths to deepen their knowledge and understanding and to challenge their thinking. In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work, direct group teaching and in other lessons by organising the children to work in pairs on open-ended questions or games. We use classroom assistants to support and challenge children and to ensure that work is matched to the needs of individuals.

Mathematics Curriculum Planning

Mathematics is a core subject in the National Curriculum and we use the National Curriculum as the basis for implementing the statutory requirements of the programme of study for mathematics.

The Primary National Curriculum gives a detailed outline of what we teach in the long term, identifying the key objectives for each year group/stage.

Our programme of study for mathematics clearly sets out what will be taught and learned at each point in the year for all year groups. We understand that a carefully planned coherent curriculum will enable pupils to know more and remember more.

Our medium-term mathematics plans, which are adopted from the National Curriculum, give details of the main teaching objectives for each term, defining what we teach. They ensure an appropriate balance and distribution of work across each term. They also plan in opportunities for children to revisit core knowledge such as place value and the four operations.

Once a fortnight, children will participate in a guided reasoning session, to support and develop pupil's problem solving skills. During these sessions, teachers will break down a problem with the pupils by discussing and asking questions about the language used and the mathematical skills that are required to solve the question. The pupils will then have the opportunity to apply what they have learnt in a new context.

Special Educational Needs

Through the equal opportunities policy, pupils with special educational needs will be included in all mathematics lessons. Staff, where appropriate, will modify activities to ensure children with special educational needs access the same mathematical curriculum as their peers. Teachers adapt lessons, whilst maintain high expectations for all, so that all pupils have the opportunity to meet expectations.

Monitoring

Mathematics is monitored in a number of different ways. All subject leaders at Greenways Primary are given time throughout the year to monitor, in depth, the different areas of their subject. One of the main areas of monitoring is pupil interviews. Giving pupils a voice in how each subject is taught is a valuable way of understanding their likes and dislikes and ways to improve the mathematics curriculum.

Lesson observations and book looks play another important role in providing valuable feedback about the quality of teaching and learning happening across the academy. This provides an opportunity for the mathematics leader to evaluate the quality of education in a given subject area and identify priority areas for development, which subsequently inform future investment in CPD.

Assessment for learning

At Greenways Primary we understand that effective assessment is critical to teaching. Assessment is utilised as a tool to check for prior knowledge and understanding, it enables staff to identify misconceptions and gaps and to provide high quality feedback for pupils.

To assess the learning of mathematics we use Assertive Mentoring; we carry out half-termly assessments to measure progress against the areas of Mathematics taught that half term, so that children's progress can be monitored. We test and use teacher assessment to identify where the children are in their learning and what their next steps will be. The use of formative and summative assessment is used to set targets half-termly in line with what the class teacher is teaching the next half term. This detailed and personalised assessment enables us to plan the next unit of work, differentiating where needed. In the foundation classes the children are constantly assessed against the Early Learning goals.

We make assessments towards the end of the academic year, and we use these to assess progress against the academy and national targets. We can then set targets for the next academic year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new academic year. We make the long-term assessments with the help of end-of-year tests and teacher assessments.

We use the National tests for children in Year 2 and Year 6 and also make annual assessments of children's progress measured against the objectives in the 2014 National Curriculum.

Resources

There is a range of resources to support the teaching of mathematics across the academy. All classrooms have an interactive whiteboard loaded with software appropriate for age.

To ensure a consistent approach to mental and formal strategies for the four operations, a Visual Calculation Policy is provided. This provides visual examples for the children and teachers to supporting the teaching of different methods and strategies.

To ensure key skills from the previous year group are embedded, children from Y2 to 6 complete the previous year group's Assertive Mentoring skills checks once a fortnight. The children have a few questions on each area of the math's curriculum to recap and also apply

in short problems.

Number lines, hundred squares and a wide range of appropriate small apparatus are available in classes. Other apparatus is available from the central storage area.

All children in Y2-6 have a log in to the online resource – Times Tables Rockstars. This resource can be accessed both in the academy and from home. This provides children with an opportunity practice their recall of the multiplication facts, thus developing their fluency and automaticity.

Additional features will include:

- Whole Academy Targets on a year by year basis
- Mental recall of times tables up to and including 12 x 12
- Mental recall of division facts up to and including 12 x 12
- Mental maths weekly tests and times tables

The New National Curriculum 2014

Five Key Themes:

- Number inc problem solving
- Measurement
- Geometry
- Statistics
- Algebra

In all these areas children need to be confident with recall of number facts, so we aim to strengthen this area to create this confidence.

Organisation

- Pupil grouping will be in mixed ability differentiated year groups. Whole class / group / and individual teaching methods
- A minimum of 5 mathematics teaching hours per week
- The teaching of mathematics will continue in all curriculum areas where appropriate
- Resources – within the academy there are sufficient resources, which will allow staff to cover all aspects of NC and provide for progression.
- The coordinators role will be in line with the academy policy and guidelines for the curriculum leader.
- ICT will be used effectively and when appropriate.
- Health and Safety will fall in line with Academy Policy
- Staff will ensure that texts / resources / associated activities are such to motivate all

pupils regardless of gender, race or creed. (see Equal Opportunities Policy)

- Lessons will be planned to meet the needs of SEN & Gifted and Talented children.
- The curriculum is planned in accordance with the NC documentation. Continuous assessment will be used to inform planning and end of year tests will take place for R to Y6.
- Staff will adhere to the academies marking policy, providing 'Challenges' to children to progress learning further.
- TA's to be deployed where appropriate to support and enhance learning.

Success Criteria

- Lessons are planned with objectives in line with Assertive Mentoring assessment documents, which correlate with the National Curriculum.
- Formative and summative will be used to enhance pupils and teachers performance.
- Relevant training to be provided for teachers to support subject knowledge and up to date year group expectations.